

## FIELD TRIPS OF THE CLUB

Field Trip of the Torrey Botanical Club, Sunday, April 21, 1929. Nineteen members of the club and friends met at the Dyckman Street Ferry for a trip along the Palisades, in spite of threats of rain. The threat was fulfilled with a few showers which culminated in a steady rain about the time the party started for home.

Along the slopes above the path many spring flowers were found:—rue anemone, blood root, dutchmans' breeches, wild strawberry and chickweed. The common horsetail, *Equisetum arvense*, was abundant, the fertile stems all withered, having shed their spores, and in one place a quantity of the winter horsetail, *Equisetum hyemale*, the stems, some of them over three feet long, all of the previous summer. Cherry trees, mostly relics of the time when homes were scattered on the occasional level spaces below the Palisades, were in blossom, as were the forsythia, Japanese barberry and Japanese quince. Here and there small peach trees were masses of pink, these apparently sprung from stones thrown away by picnickers.

Lunch was eaten below Buttermilk Falls. Against the sides of the cliff several shrubs of shad bush were in bloom. After a short time spent in studying rocks, the party climbed to the top along a long disused road. After wandering through the oak woods the party walked around the depression known as the Keldars. Along the sides of the swamp that fills the Keldars and by the brook which makes the falls, below which lunch had been eaten, spring beauties and dogtooth violets were in blossom, though nodding their heads and half closed because of the lack of sunshine. A few blue violets and one patch of white were found in the damp ground and some of the downy yellow violet in the drier woods. The unfolding plicate leaves of the white hellebore were in sharp contrast with the half developed skunk cabbage. Cinnamon, interrupted and royal ferns were found unrolling their fronds. In the water were several clumps of golden club, *Orontium aquaticum*, the yellow spikes of flowers showing for an inch and a half or two inches above the water. This was the only uncommon flower found. In the swamp of the Keldars the heart-leaved willow were in blossom, both the staminate and pistillate.

The members of the party also enjoyed the abundant bird

life. One little apple tree whose buds were just showing a bit of pink was alive with kinglets, ruby and golden crowned, busy hunting insects. It was interesting to see them poise in front of a half opened leaf bud on fluttering wings like a humming bird to probe for insects hidden there. With the kinglets were several myrtle warblers. The hermit thrushes were everywhere, sometimes singly, more often in pairs or in small flocks of six or seven.

Under two widely separated sugar maples the ground was found covered with small twigs with the flower clusters and opening leaf buds. These were apparently bitten off by squirrels. Possibly there was still enough sugar in the sap to make the squirrels prefer these to other twigs as nothing of the sort was found under other trees.

GEORGE T. HASTINGS, *Leader*

### Field Trip of May 18

On the trip to the Moravian Cemetary on Staten Island many native flowers and trees were observed, a number of ferns were found and some time was spent observing birds. A list of some thirty flowers was made, including four violets, the lance-leaved, the common blue, the bird's-foot and the arrow-leaved. Fourteen species of ferns,—the three Osmundas, the sensitive, Virginia grape, brittle, Christmas, New York, broad beech, ebony spleenwort, silvery spleenwort, lady and maiden hair. Forty species of birds were seen including the cardinal and the following warblers,—black-and-white, parula, worm-eating, blue-winged, golden-winged, yellow, black-throated blue, myrtle, magnolia, chestnut-sided, blackburnian, black-poll, Canadian, oven-bird, Maryland yellow throat, and redstart.

FARIDA A. WILEY, *Leader*

### Field Trip of May 19

#### Two Plants in Conditions of Difficulty

Two plants, the Walking Fern, *Camptosorus rhizophyllus*, and the Prickly Pear Cactus, *Opuntia vulgaris*, existing under conditions in which they do not seem at their happiest, and where their persistence seems precarious, were the chief objectives of

a field excursion enjoyed jointly by the Torrey Botanical Club, and the New York Chapter of the Appalachian Mountain Club, and also by members of the New York Microscopical Society and the New York Bird and Tree Club, on Sunday, May 19. The route was from Riverdale, N. J., on the Greenwood Lake division of the Erie Railroad, to Pompton Lake, up Firey Brook to Pine Lake, a new artificial water body, and along the basalt ridge which connects Packanack and Preakness Mountains. It was intended to go to Franklin Notch, but a heavy thunderstorm which drenched everyone, drove the party out early to Upper Preakness, to take bus to Paterson and New York. Sixteen were present, ten women and six men.

The first of these plants in unusual conditions to be examined was the Walking Fern, in the only occurrence of the plant in northeastern New Jersey, on the walls of the gorge of Firey Brook, about a quarter of a mile east of Pompton Lake, and about 200 yards below the dam impounding Pine Lake. This is a very interesting gorge. Its upper walls show normal Triassic Newark sandstone, mostly in massive strata, with some thin-bedded shaly streaks. At the bottom, a few feet above the brook, is exposed a peculiar conglomerate, with a matrix of Newark sandstone, inclosing pebbles, up to the size of an apple, of three kinds of rock, Newark sandstone, basalt of the same age, and limestone of probable Silurian age. The limestone is attributed to beds of such material, laid down in marine waters east of the Archean granites and gneisses of the Ramapo mountains, which dropped thousands of feet in the disturbance which included the famous Logan Line fault, at the end of the Triassic period, or early in the Cretaceous. The beds dropped out of present sight, but the conglomerate including pebbles worn from them, by atmospheric weathering and assembled in some sea beach or erosion fan, was apparently unaffected by the disturbance, except that it presents the same inclination shown in all of the Triassic sandstones, toward the west, in the direction of the great fault line bordering the old rocks.

The presence of these limestone pebbles, which make up not more than twenty per cent, probably less, of the content of the conglomerate, evidently provided the calcium usually preferred by the Walking Fern. That there is scarcely enough lime in the rock for the Fern to be happy is indicated by its

stunted condition. The fronds are not half the normal size of those I have found on ledges of high lime content in the Wallkill Valley, or on the Mississippi river cliffs in Iowa, or in the Harlem valley in Putman and Dutchess counties. With it is much maidenhair spleenwort, more healthy in appearance; evidently this species can prosper with much less lime. I have seen Walking Fern on a limestone boulder, of high calcium content, a glacial erratic on granite, in Sussex County, N. J., which was perfectly normal, though ten miles away from the nearest ledges of such rock. The wonder in both cases is at the establishment of the Walking Fern in the first place, so far from its usual haunts.

The other plant, the Prickly Pear Cactus, was found on thin soil covering the basalt of Preakness Mountain, a mile northeast of Pine Lake. Various evidences pointed to the certainty that the ridge was once in open pasture. The red cedars were dying from the increasing shade of oaks and other hardwoods which were re-establishing themselves. *Phlox subulata*, which usually prefers the sun, persisted, in thin unthrifty stands in this shade. Prickly Pear is not rare in northeastern New Jersey and the Lower Hudson Valley; I know a dozen stands of it, but it always seems strange to see a plant which one associates with the arid Southwest in our northeastern hardwood and mixed forest areas. I believe the accepted explanation is that the cactus and probably other plants of arid climes migrated north after the close of the last Glacial Period, during a time of low rainfall, as indicated by aeolian deposits in the Mississippi valley and other evidence; and that since the climate has become more humid, the plant has retreated to dry, sandy places, such as Nantucket Island, eastern Long Island and southern New Jersey, and to lofty, rocky, almost bare hilltops, or similar situations.

The small colony of Prickly Pear which we found on Preakness Mountain was no more happy than the lime-starved Walking Fern; it was not spreading, showed no blossom buds, and some of its fleshy branches were withering. Evidently the shade, increasing yearly since the last cutting, or since the ridge was in pasture, is gradually killing it out. Its tenure in this locality seems likely to be short. I have seen two or three other small stands on this ridge, and only one, on a dry open ledge, was observed to bear blooms and fruit.

The party was pleased to find several colonies of Purple Lady's Slipper, in good bloom, evidently escaped from danger of ruthless plucking because off the common trails. *Azalea nudiflorum* was increasing and many splendidly blooming clumps were seen. *Saxifraga pennsylvanica* in a little bog was a plant new to some. The puzzling early leaves of *Aster cordifolius* and *variegata* were interesting; one is hardly sure, in May, what they are. False miterwort, not common in northern New Jersey, was found in the Firey Brook gorge. Those in the party interested in birds found the scarlet tanager most numerous or at least most vocal. An oddity was the growing together, rolled within each other, in their upper portions, of three large leaves of the skunk cabbage, evidently from failure to separate in the budding stage.

RAYMOND H. TORREY. *Leader*